

ABSTRACT OF THE DISCLOSURE

Precursor compositions for the CVD formation of low k dielectric films on a substrate, e.g., as an interlayer dielectric material for fabrication of microelectronic device structures. The precursor composition includes a gaseous mixture of (i) at least one aromatic compound, (ii) an inert carrier medium and (iii) optionally at least one unsaturated constituent that is ethylenically and/or acetylenically unsaturated. The unsaturated constituent can include either (a) a compound containing ethylenic unsaturation and/or acetylenic unsaturation, or (b) an ethylenically unsaturated and/or acetylenically unsaturated moiety of the aromatic compound (i) of the precursor composition. The low k dielectric film material may be usefully employed in integrated circuitry utilizing copper metallization, to achieve low RC time constants and superior microelectronic device performance.